What is claimed is:

1. A sensor comprising:

a dielectric block;

a thin film formed on a face of the dielectric block and in contact with a specimen;

a semiconductor laser unit as a light source which emits a light beam;

a first optical system which injects the light beam into the dielectric block so that the light beam is incident on a boundary between the dielectric block and the thin film at a plurality of incident angles which are greater than a critical angle for total reflection; and

a light detecting unit which detects a state of attenuated total reflection by measuring an intensity of the light beam totally reflected from the boundary;

wherein said semiconductor laser unit is driven with a driving current on which a high frequency component is superimposed.

2. A sensor according to claim 1, wherein said semiconductor laser unit comprises a stabilization unit for stabilizing an oscillation wavelength.

3. A sensor according to claim 2, wherein said stabilization unit comprises,

a second optical system which feeds back

to the semiconductor laser unit a portion of the light beam emitted from the semiconductor laser unit, and

a wavelength selection unit which selects a wavelength of the portion of the light beam.

4. A sensor according to claim 3, wherein the frequency of the high-frequency component superimposed on said semiconductor laser is within the range of 200MHz-1000MHz.

5. A sensor comprising:

a dielectric block;

a metal film formed on a face of the dielectric block and in contact with a specimen;

a semiconductor laser unit as a light source which emits a light beam;

a first optical system which injects the light beam into the dielectric block so that the light beam is incident on a boundary between the dielectric block and the metal film at a plurality of incident angles which are greater than a critical angle for total reflection; and

a light detecting unit which detects a state of attenuated total reflection due to surface plasmon resonance by measuring an intensity of the light beam totally reflected from the boundary;

wherein said semiconductor laser unit is driven with a driving current on which a high frequency

component is superimposed.

6. A sensor according to claim 5, wherein said semiconductor laser unit comprises a stabilization unit for stabilizing an oscillation wavelength.

7. A sensor according to claim 6, wherein said stabilization unit comprises,

a second optical system which feeds back to the semiconductor laser unit a portion of the light beam emitted from the semiconductor laser unit, and

a wavelength selection unit which selects a wavelength of the portion of the light beam.

8. A sensor according to claim 7, wherein the frequency of the high-frequency component superimposed on said semiconductor laser is within the range of 200MHz-1000MHz.

9. A sensor comprising:

a dielectric block;

a cladding layer formed on a face of the dielectric block;

an optical waveguide layer formed on the cladding layer and in contact with a specimen;

a semiconductor laser unit as a light source which emits a light beam;

a first optical system which injects the light beam into the dielectric block so that the light beam is incident on a boundary between the dielectric

block and the cladding layer at a plurality of incident angles which are greater than a critical angle for total reflection; and

a light detecting unit which detects a state of attenuated total reflection due to excitation of a propagation mode in the optical waveguide layer, by measuring an intensity of the light beam totally reflected from the boundary;

wherein said semiconductor laser unit is driven with a driving current on which a high frequency component is superimposed.

10. A sensor according to claim 9, wherein said semiconductor laser unit comprises a stabilization unit for stabilizing an oscillation wavelength.

11. A sensor according to claim 10, wherein said stabilization unit comprises,

a second optical system which feeds back to the semiconductor laser unit a portion of the light beam emitted from the semiconductor laser unit, and

a wavelength selection unit which selects a wavelength of the portion of the light beam.

12. A sensor according to claim 11, wherein the frequency of the high-frequency component superimposed on said semiconductor laser is within the range of 200MHz-1000MHz.